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OHIO STATE UNIV MANSFIELD DEPT OF PSYCHOLOGY

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REWARD VERSUS REINFORCEMENT POSSIBILITIES OF THE MERIT PAY SYST--ETC(U)

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Reward Versus Reinforcement
Possibilities of the Merit Pay System

Jane A. Rysberg
The Ohio State University

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Author's address:

The Ohio State University, 1680 University Drive, Mansfield, Ohio, 44906

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The Dual Possibilities of
the Merit Pay System:
Reward or Reinforcement?

Jane A. Rysberg
The Ohio State University

John A. Guerrieri
Human Resources Laboratory

Abstract

The Civil Service Reform Act (CSRA) of 1978 mandated a change in the philosophy and methodology in the evaluation of job performances. The new method will be an objective, ipsative one, providing accurate assessments of behavior. One purpose of this assessment will be the identification of high quality performances. The CSRA provides for a system of pay adjustments, called Merit Pay (MP), to reward these quality performances. The MP system is also charged with creating new levels of productivity, efficiency and timeliness among the Civil Service population. Can a program of monetary bonuses both reward and motivate Civil Servants? If money is inadequate for this combined purpose, what can be added to increase the power of the system? These were the questions addressed in this study. A review of the literature suggested the potential reinforcers, used in a paper and pencil test for Civil Service manager/supervisors. The prediction of efficient motivators is discussed.

Introduction

The Civil Service Reform Act of 1978 (CSRA) provided for restructuring of job performance evaluation aspects of the Civil Service system. One aspect of this type of evaluation is recognition of quality performances. The Reform Act provided for establishment of the Merit Pay System (MPS) to accomplish this end. In addition, the MPS is charged with improving productivity of work and services in the Federal Government.

As defined by CSRA, pay adjustments by merit might be the end products of something known as "good work;" therefore, Merit Pay would be a reward. What is the impact of such a predictable outcome on behavioral topography? Review of laboratory literature in this area suggests three aspects of an effect. First, behavioral topography will stabilize after exposure to a predictable outcome (Nurnberger, Ferster, & Brady, 1963). Second, regardless of particulars of target behavior, the highest behavioral output will immediately precede an incentive, with no output immediately following receipt of the predictable incentive (Nurnberger et al., 1963). Finally, Ferster, Culbertson and Boren (1975) demonstrated that to demand an increase in the amount of behavior required to receive an award often results in a total stoppage of the behavior. This phenomenon, called strain, refers to a failure of performance, rather than to physical exhaustion.

Use of Merit Pay as a reward system might, therefore, be associated with a level of work flow which was at best stable, and at worst, faltering. This impact of the Merit Pay system would be in violation of the CSRA mandate to improve productivity of work in the Federal government.

There is a second possibility to consider in relation to a merit system bonus distribution as a motivational system, in which merit adjustment is viewed not as an end, but as a beginning. The term "reinforcer" replaces

"reward;" by definition, a reinforcer has the power to drive behavior.

What would be the difference between a reward system and a reinforcement system, aside from terminology? The use of pay adjustments as a reward system required two steps: first, identification of instances of quality performance; second, distribution of the bonus dollars to the targeted individuals. The use of merit pay as a reinforcement system would require this same structure with the addition of a consideration as to what else the system will distribute.

The Civil Service Reform Act describes the quality performance awards as monetary. As ancient cuneiform tablets record the giving of pieces of silver to craftsman for the completion of household goods, it appears that "money" and "work" have a long history of association. Yet the intuitive appeal of the motivational strength of money alone may be somewhat exaggerated. Small sample surveys (Henry, 1971) suggest that American employees wish to work at jobs that pay them a "sufficient wage." Yet the term "sufficient wage" is not defined so as to highlight the amount of money necessary to maximize motivation. "Sufficient" is an adjective which may be used in a highly idiosyncratic manner, so that a given figure may represent a sufficient wage or bonus for person A and an insufficient wage or bonus for individual B. Sufficiency may also be measured against the target task. Gray (1971) reported a situation in which production was unimproved by a bonus system, as workers reported the bonuses to be "inadequate." Bischof (1976) has suggested that workers define sufficient in terms of goods and services purchasable. This implies that sufficiency is unobtainable in times of rising inflation.

The decision to distribute dollars as quality awards is not unique to the Civil Service Reform Act of 1978. However, policy decisions subsequent to the CSRA have shaped a unique distribution of the monetary awards. Under past

systems of distributing monetary inducements, a majority of civil servants received some amount. Under the Merit Pay system, fewer workers may receive larger amounts. What are the motivational effects of a change from a system in which workers were conditioned to expect bonuses to one in which these expectations may not be met? Recent research (Bischof, 1976, p, 214) suggests that the loss of an expected promotion, training opportunity, or salary increase is associated with demotivation, as measured by reduced activity on the job.

If the Merit Pay System is to be used as a method to increase civil servants' motivation to perform a job, and ultimately their productivity and timeliness, certain aspects of the system must be examined and possibly modified. Specifically, is the amount of money available for Merit Pay bonuses infinite? If not, the problems of sufficiency or neglect may arise. To countermand such potential disorders of the system, additional motivators might be distributed. How can effective non-monetary motivators be selected? A review of the pertinent literature will suggest possibilities, but a measurement instrument, a questionnaire, will be needed to quantify the motivational trends among the Civil Service population.

Review of the Literature

David Premack (1959) has suggested that the strongest motivation will be engendered by self-selection of the reinforcer. Called the Premack Principle, this suggestion was implemented initially in clinical and educational settings. There is, however, some evidence of an impact of self-selected reinforcers with industrial populations. Lesieur (1958) documented improved job performance, as measured by reduced absenteeism, in a factory which allowed employees to select their own non-monetary reinforcers. The effect was most marked in the group which had originated the self-reinforcement plan.

The success of these self-selection strategies suggests that properties of reinforcers may be stable over certain employee characteristics or job variables. What are these defining characteristics? Past research has shown that if members of a group of workers differ on social class or race (Quinn, Staines & McCullough, 1974), educational level (Campbell, Converse & Rogers, 1976), age (Meltzer, 1965), job level (Sarason, Sarason & Cowden, 1975) or sex (Institute for Social Research, 1972), a single reinforcer will not be universally effective. The failure of an event or object to reinforce in situation two as well as in situation one is not explained in the previous research; person variables (i.e., sex or age) are confounded with job variables (i.e., educational or job level). When population characteristics have been controlled, variables with demonstrated effectiveness have emerged. Lawler and Hachman (1969) found that older workers were more reinforced by a higher health insurance coverage, -lowered salary package than were young workers. Young workers regarded a higher salary -lowered insurance coverage plan as optimal. (The total dollar amount was equal in both cases.)

In a homogeneous group of workers, Hedges (1973) found the motivation to work increased when the employees were given the opportunity to distribute their work time. This variable scheduling of work hours is called flextime.

The freedom to describe job responsibilities is called job enlargement. Quinn et al. (1974) found that workers who were allowed to select the tasks to be accomplished were more likely to complete them, even when difficulties were encountered. Managers in the Naval Civil Service described mere acknowledgment of their suggestions for job improvements as reinforcing (Lau, Broedling, Walters, Newman & Harvey, 1979).

Yet the available literature does not permit the construction of a model which could be used to predict specific non-monetary reinforcers for Civil Service management. First, studies of effectiveness of non-monetary

reinforcers using samples of management subjects are rare. More typically subjects have been managed subjects, for example, clerical, warehouse or aircraft parts workers. In this survey of the research literature, 53% (n=31) of available studies used a blue collar population. Manager-level samples, such as educational administrators or telephone company supervisors, were used in only 32% (n=19) of the studies. The remaining 15% (n=9) of the studies used a combined manager-managed sample.

Secondly, the literature available on the uses of non-monetary reinforcers in management populations is limited in the types of variables investigated. Over 47% of the literature on management described manipulation of one potential reinforcement variable, specifically, fulfillment of the need for achievement.

This paucity of past research need not suggest that non-monetary incentives are inappropriate to management behaviors. It may imply, instead, that the effectiveness of non-monetary awards are easier to measure in blue-collar populations, which produce tangible, countable goods, for example, number of books-bound (Harris & Locke, 1974). The dependent variables in productivity studies of manager/supervisors are less obvious but still available. Measurements might include changes in cost or time per project, changes in the number of complaints from departments farther up the management chain, or changes in subjective feelings of accomplishment. Increased productivity would be defined as declines in the first two categories, with a rise in the third.

Lastly, the size of the samples used in relevant studies are much too small to be used as a model of the impact of specific non-monetary reinforcers on the vast Civil Service population. In 57 studies done over the past nine years, the mean sample size was only 427 individuals (range 24 to 4980).

Test Construction

In order to construct a model of reinforcer effectiveness for the Civil Service population, the implications of past research must be wedded to an appropriate sample. Both the scientific and governmental publications were surveyed for demonstration of increased productivity after applications of non-monetary reinforcers. The studies were categorized according to the variables manipulated, creating the following classes of potential non-monetary reinforcers:

- 1) Career Development. The productive individual is given access to a well-defined series of promotional opportunities. S/he is given first priority in the "career ladder", the use of promotional schedules and the identification of available career paths.
- 2) Educational Incentives. The productive worker will receive non-monetary considerations to encourage him/her to continue a formal, professional or technical education. This could include tuition reimbursement, time off to attend courses, or access to specialized in-house courses.
- 3) Flextime. The productive worker gains personal control over the work schedule. An individual might choose to work four ten-hour days. One might select to use staggered hours, arriving, for example, between 8 and 9 o'clock, and leaving between 4 and 5. Variable hours are also a possibility; as long as one works 40 hours in a given seven day period, one is free to work any hours and to change schedules every week if desired.
- 4) Job Enlargement. Job enlargement, in general, allows productive workers to make their job more interesting and/or responsible. There are four traditional approaches to job enlargement.
 - a) An individual might be given expanded opportunities for decision

making, therefore contributing to the problem solving activities usually reserved for upper management.

- b) An individual might use job rotation, working in a same level job in a different unit.
 - c) An individual might redesign the traditional method of accomplishing a task.
 - d) An individual might call together a group of workers to accomplish a whole task, of which s/he previously only performed a part.
- 5) "Odds and Ends." Odds and Ends refer to a variety of events and objects available to the productive individual. These would be specific to the individual's unit, but might include a special trophy or a testimonial dinner.
- 6) Personal Variables. Most individuals are aware of what they regard as their strong and weak points as well as what motivates them. For example, an individual might have a strong need to achieve in his/her work setting. The work environment of the productive individual is manipulated to fulfill his/her stated need.
- 7) Pleasures at Work. Productive individuals are given the opportunity to use facilities at work, which have been specially constructed for these workers. These facilities might be an exercise room, a tennis court, a pool or a recreation room.
- 8) Productivity Bargaining. Productive individuals have an edge in one-to-one negotiations. Increased productivity can be traded for increased benefits at the time of the annual review.
- 9) Recognition. The productive individual is publically acknowledged as such, both in the work place and in the community. For example, there might be an article describing the individual's performance in the local press and in work bulletins.

- 10) Setting Variables. The productive individual has a freer hand in arranging his/her work environment. This refers both to a freedom to manipulate the physical environment (Desk, over here!) and to a freedom to assign tasks and responsibilities to the people in the unit.
- 11) Work Standards. Productive individuals have already met certain desired level of performance. These individuals are then allowed to set and adhere to their own standards of productivity.

Civil Service subjects might simply be requested to select an individually appropriate reinforcer. Past research, however, suggests that humans are inaccurate in predicting future actions without behavioral anchors. A study of the job responsibilities of Civil Service manager/supervisors at Naval installations provides such behavioral anchors. (Lau, Broedling, Walters, Newman & Harvey, 1979).

A simple pairing of behavioral anchors and alternate sets of reinforcers does not create an appropriate questionnaire. The original questionnaire was tested for reading level. The Flesch (1948) score was deemed appropriate for a reader sample of at least high school level. A pilot sample of manager/supervisors was pilot tested in order to determine the goodness of test construction.

Questions

Questions to be investigated in the study are:

1. Is there a significant correlation between reinforcement categories and demographic variables in a Civil Service population?
2. As motivation may be described as willingness to perform a task, what is the relationship between specific tasks and motivator categories?
3. Are the task descriptions created by Lau et al, 1979 relevant to other manager/supervisor populations?

4. What is the basic profile of mid-level Air Force Civil Service manager/supervisors?

Method

Pilot Test

Subjects

Subjects were 124 supervisor/managers from four local corporations. The particular corporations were selected because managers on equivalent levels did not necessarily supervise workers performing the same task. This made the sample comparable to the target Civil Service management population. In addition, the corporate sample had a good racial and educational distribution.

Instrument

A paper and pencil test of the perceived motivational properties of the variables which had been derived from the research literature was created. It consisted of four parts.

1. Demographics. Variables of interest were age, sex, race/ethnic group, educational level, years on present job, years with present company, years in present line of work, ultimate work status desired, number of workers supervised, and general level of job satisfaction.
2. Reinforcer selection. A brief description of a work event was presented, followed by a pair of reinforcers. Subjects were asked to select which of the listed events would be most likely to cause them to persevere in the described situation.
3. Critical incident. This section is a variant of the technique often used to describe performance objectives on the job. Subjects were asked to describe a "critical reinforcer incident" which occurred during the past work month. A "critical reinforcer" was an event or object which happened on the job and caused the individual to feel a greater eagerness to pursue a particular task.
4. Ranking. Subjects were presented with a list of reinforcers, and asked to rank them according to their motivational properties.

Testing

Initial contact with the local manager/supervisors was made by mail. Individual letters detailed the philosophy and mechanics of the survey, and solicited the readers' assistance. A week after the mailing, subjects were approached about participation. The survey was accepted by 110 persons. Subjects completed the questionnaire at their leisure. The booklets were collected one week after distribution.

Nine subjects were randomly selected to complete the questionnaire while being observed by the experimenter. These subjects were also interviewed concerning the questionnaire. They were retested nine days after the initial testing with the original instrument.

Method

Civil Service Sample

Subjects

Subjects were 490 Civil Service manager/supervisors from Brooks, Kelly, Lackland, Randolph, Patrick and Tyndall Air Force Base.

Testing

The revised questionnaire was mailed to eligible manager/supervisors. A cover letter detailed the philosophy behind the survey, as well as providing instructions for questionnaire completion. Subjects were requested to return the form to a central collection point. Clarification of instructions or rationale was available from the collection point on an individual basis.

Results

Pilot Test

The purpose of pilot testing was to establish the goodness of the instrument; only data relevant to this issue will be cited.

The return rate was 84%, (n=101). There were no consistent errors or blanks, indicating that the format of the questionnaire was comprehensible to the subjects.

One section provided consistently unusable data; this was the "critical incident" section. Over half of the subjects responded with variables which are intrinsic to the workplace and therefore, could not be manipulated as a reinforcer. (16% breaks/coffee breaks; 17% lunch; 19% leaving work). Nearly one-quarter of the respondents indicated work variables which were likely beyond or below the basic job description (14% Being relieved of task; 10% Being of assistance in an employee's personal problem). Six percent of the answers had no general meaning (ex. "I talked to Joe"). As the critical incident section proved to be such a poor source of potential reinforcers, it was deleted.

The ranking section was also problematic. Test-retest reliability of the ranks was .3, an insignificant figure. In addition, the correlation (Spearman rho) between selection of the reinforcement variables in the paired choice section and in the rank section did not approach significance. This lack of test-retest and inter-item reliabilities caused the ranking section to be deleted.

The paired alternate section of the pilot version of the questionnaire contained 220 items. This number of items was necessary to allow for all possible combinations of the 11 potential reinforcers. One purpose of pilot testing was to determine the appropriateness of the pool of reinforcers to a management population. Each reinforcer was presented 20 times. As the form of presentation was paired alternates, a score of 10 would indicate performance at the chance level. The total score for a reinforcer could range from 0 to 20, with a score of 12 or better

indicating significant preference for the reinforcer. Six of the original reinforcers failed the test of significance: odds and ends, personal variables, pleasures at work, productivity, setting variables and work standards.

The interview data suggest consistent objections to the six failing reinforcers. Seventy percent of the interviewees deemed "pleasures at work" to be inappropriate to a work setting. "Odds and ends" were rejected by 87% of respondents because of the basic worthlessness of tokens such as plaques, and to the lack of durability of its influence in the work place. Work standards and productivity bargaining were labeled as nonreinforcing by 62% and 71% of the sample respectively, because of a disbelief concerning their acceptance by top level management. Setting variables were seen as redundant with job enlargement by 57% of speakers as the ability to move people implied the ability to move their furnishings. Personal variables were seen as reasons to accept a position, not to maintain it by 68% of the speakers.

The final questionnaire therefore consisted of:

1. the demographic section
2. a paired alternative section combining five reinforcers (career development, educational incentives, flextime, job enlargement, and recognition) and four job factors (Supervision, Information Gathering and Dissemination, Executive Decision Making and Technical Problem Solving). There were forty items in this section.

Results

Civil Service Sample

The revised questionnaire was mailed to 490 Air Force manager/supervisors. The return rate was 75%, providing 369 questionnaires for analysis. At least one page was inadvertently deleted from 1% of the returned questionnaires. In such cases all valid data was entered in the analyses. Page omissions and cases in which a subject declined to answer a specific question were entered as missing data.

The demographic variables are summarized on Table 1. Table 2 presents data found as free responses on the questionnaires. These comments were found in margins or on the back of the questionnaire. The 52 comment-questionnaires were analyzed separately and found not to differ significantly from the main body of information. Subsequent analyses were conducted on the combined data.

Recognition was not significantly related to any demographic or job factor. In addition, in no pairing was recognition found to be the significantly preferred selection.

The most preferred reinforcer was career development, being significantly preferred in 50% of the cases. Job enlargement was the second order variable, being significantly preferred in 31% of the cases. Flextime and educational incentives were preferred in 11% and 8% of the cases, respectively.

Canonical correlation analyses suggest distinctive packagings of reinforcers for each job factor. This is shown on Table 3.

Correlations were also computed, to describe the relations between demographic variables and reinforcers. There was a significant positive correlation between educational level and desire educational incentives (Spearman $\rho = .41$, $p = .001$. There was a significant positive correlation between number of years until retirement and desire for career development, as well as between number of people supervised and desire for job enlargement (Point-Biserial, $r_{pb}^2 = .75$, $p = .05$ and Spearman, $\rho = .21$, $p = .05$, respectively.) A U-shaped function described the

relation between age and desire for educational incentives. The relationship approached but did not achieve significance ($p = .07$).

Discussion

First, the present research demonstrates two purely methodological conclusions. Lau, Broedling, Walters, Neuman and Harvey (1979) detailed the nature of the job performed by Naval Civil Service executives. Four task factors, supervision, executive decision making, technical problem solving and information gathering/dissemination were found to account for almost all of the work load of the sample. Neither the pilot sample of private industry managers nor the Civil Service sample registered difficulty with the task variables. This suggests that the four task factors are at least recognizable to manager/supervisors in a variety of work situations.

It has also been demonstrated that motivational research is possible with managerial populations. While motivational research has typically involved the giving and withholding of reinforcers, paper and pencil tests such as this may provide an inexpensive first step for populations as vast as the Civil Service.

From the original list of 11 potential reinforcers, only four (career development, job enlargement, flextime and educational incentives) passed the test of self-selection by samples of managers and supervisors. The notion of "intuitive appeal" as a criteria for reinforcer selection has lost its intuitive appeal. Items such as plaques or recognition ceremonies, while rich in historical precedents, may endure because of reinforcement to the giver not to the receiver. As personal acclaim was selected in less than 2% of the cases, an argument for its strong reinforcing properties cannot be made.

Premack (1959) has argued against the notion of a universal conditioned reinforcer, yet career development and job enlargement appeared as the most significant reinforcers in all four of the task situations. While this suggests

that these two reinforcers are potent to the work-life of Air Force GS 13 to 15 manager-supervisors, it does not suggest that these should be the only non-monetary reinforcers in a motivational system. The remaining reinforcers, flextime and educational incentives, did account for a substantial amount of the variance in the task-reinforcer combinations (Table 3). In addition, demographic variables, such as age and educational level, also predicted reinforcer selection.

As the effect of a monetary bonus is unpredictable, while the loss of an expected opportunity is predictably negative, the Merit Pay system is not a process which will reliably increase the productivity of Air Force Civil servants. The present research suggests implementable inexpensive reinforcers for a management population, and a method for detecting viable reinforcers in other populations.

Table 1

Profile of Civil Service SampleSex

Male 93%

Female 5%

Age

31 to 35 years 2%
 41 to 45 years 14%
 51 to 55 years 28%
 61 to 65 years 6%

36 to 40 years 8%
 46 to 50 years 22%
 56 to 60 years 19%

Racial Identification

White 81%
 Black 3%
 Asian 1%

Spanish Surname 11%
 American Indian 1%
 Other 3%

Education

High school graduate 5%
 Associate of Arts degree 4%
 Post graduate work 24%
 Doctorate 11%

Some college 21%
 Bachelor's degree 13%
 Master's degree 20%

Years on Present Job

Range Less than 1 year to 24 years
 Mean 5.6 years
 Less than one year 9%
 1 to 5 years 59%
 6 to 10 years 17%
 11 to 15 years 8%
 16 to 20 years 4%
 21 to 25 years 2%

Years in Civil Service

Range Less than 1 year to 43 years
 Mean 13.3 years
 Less than one year 2%
 1 to 5 years 20%
 6 to 10 years 35%
 11 to 15 years 19%
 16 to 20 years 1%
 21 to 25 years 9%
 26 to 30 years 4%
 31 years and over 9%

Years in Present Occupation

Range Less than one year to 24 years

Mean 13.4 years

Less than one year 4%

1 to 5 years 9%

6 to 10 years 19%

11 to 15 years 20%

16 to 20 years 37%

21 to 25 years 9%

26 years and over 1%

Workers Supervised

0 persons 2%

1 to 5 persons 52%

6 to 10 persons 28%

more than 10 persons 6%

Expectation to Move Higher Than Present Job

yes 85%

no 12%

Years Before Retirement

Range Less than one year to 22 years

Mean 12.3 years

Less than one year 1%

1 to 5 years 17%

6 to 10 years 23%

11 to 15 years 44%

16 to 20 years 12%

over 20 years 2%

Job Satisfaction

Extremely Dissatisfied 8%

Very Dissatisfied 11%

Moderately Dissatisfied 7%

Slightly Dissatisfied 23%

Neither Satisfied nor Dissatisfied 11%

Slightly Satisfied 19%

Moderately Satisfied 9%

Very Satisfied 6%

Extremely Satisfied 1%

Note: Percentages do not sum to 100% due to missing data

Job Series Number

# =	$\frac{5}{4}$	$\frac{8}{8}$	$\frac{9}{2}$	$\frac{10}{3}$	$\frac{11}{37}$	$\frac{13}{17}$	$\frac{14}{1}$
n =							
# =	$\frac{15}{6}$	$\frac{16}{20}$	$\frac{17}{14}$	$\frac{18}{16}$	$\frac{19}{8}$	$\frac{20}{43}$	$\frac{21}{4}$
n =							
# =	$\frac{22}{7}$	$\frac{23}{4}$	$\frac{28}{1}$	$\frac{30}{31}$	$\frac{33}{21}$	$\frac{34}{28}$	$\frac{41}{1}$
n =							
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n =							
# =	$\frac{80}{12}$	$\frac{81}{6}$	$\frac{83}{7}$	$\frac{85}{18}$	$\frac{86}{3}$	$\frac{88}{6}$	
n =							

No response

24

Total n = 369

Table 2

Free Responses

- n=20 Objections to Survey's Content These comments typically described a particular reinforcer as inappropriate Example: "Flexitime is not suited for our operation because of the centralized management and need for coordinate resolution of problems."
- n=15 Objections to Survey's Structure These comments indicated the subject's displeasure with the length and/or format of the survey. Example: "You could have saved a lot of time, effort and paper to have simply requested an ordered choice of the available options."
- n=9 Explanatory These comments explained alternate methods to increase productivity. Example: "I think productivity could be improved by screening supervisors to make sure they are positive thinkers."
- n=3 Results A subject requested to see the results of the survey.
- n=3 Idiosyncratic These comments did not fit in any other category. Example: "I had to do this at home."
- n=2 Objections to Survey's Philosophy These comments indicated the writer's disapproval of the Merit Pay System. Example: "The Merit Pay System is another way to embezzle Government funds and take bread from those who lose cost of living allowance to award the political few."

Total number of comments = 52

Table 3

Relation Between Reinforcers and Task Factors

<u>Factor</u>	<u>Reinforcers</u>	<u>Canonical Correlation</u>	<u>Significance</u>
I - Supervision	career development	.790	.01
	job enlargement		
	flextime		
	educational incentives		
II - Information Gathering	career development	.678	.01
	job enlargement		
	flextime		
III - Technical Problem Solving	career development	.503	.02
	job enlargement		
IV - Executive Decision Making	career development	.621	.01
	job enlargement		
	educational incentives		

Summary

1. The Merit Pay System as it stands could be used as a reward or a reinforcement system.
2. To accomplish some of the objectives outlined by the Civil Service Reform Act of 1978 for the Merit Pay System (ie., increases in productivity, timeliness, efficiency, etc.), the reinforcement system must be used.
3. Reviews of the available scientific and industrial literature show that distribution of monetary bonuses alone does not engender motivation.
4. The review of the literature does suggest non-monetary reinforcers with demonstrated motivational effects in a variety of work places.
5. A paper and pencil test was created to allow self-selection from among these non-monetary reinforcers.
6. The format of the measurement instrument was honed on a small population of manager-supervisors in private industry.
7. A sample of GS-13 to 15's as surveyed using the revised questionnaire.
8. Four variables, career development, educational incentives, job enlargement and flextime, emerged as non-monetary reinforcers appropriate to Civil Service managers and supervisors.

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Appendix 1

Bibliography of Reinforcer Categories

Note ¹: "n" refers to the number of individuals tested in the designated study.

Note ²: Studies cited simply by agency and location, for example "Dallas Police Department" are based on statistics compiled by the National Commission on Productivity and work quality, 1975 (2000 M Street, N.W., Washington, D.C., 20036)

Career Development

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American Federation of State, County and Municipal Workers
 Dallas Police Department
 Kansas City (Mo.) Street Maintenance
 Los Angeles City workers
 Maryland State employees
 Santa Clara City workers
 State hospital workers; Maryland, Massachusetts, Minnesota

Educational Incentives

Sanitation Workers of Inglewood, California

Police Department of San Jose, California

City Workers of San Francisco, California

Maryland Department of Education

Flextime

Ambulance Service of Forsyth County, North Carolina

City Administrative Offices: Costa Mesa and Pasadena, California

Beach Patrol of Miami Beach, Florida

Civil Defense Workers of St. Louis County, Minnesota

County Clerks Office Workers: Orange County, California; Fulton County, Georgia

Data Processing Officers: Alameda County, Redwood City and Salinas, California; Orlando, Florida; Atlanta, Georgia; Tyler, Texas

City Engineers: Garden Grove, California; Leon County, Florida

County Auditor/Assessor/Finance Officer: South Gate and Tulare County, California; Atlanta and Fulton County, Georgia

Fire Service: Freemont, California; Miami, Florida; Somerville, Maine

Hospital/Health Service Workers: San Mateo County, California, Hennepin, Ramsey and St. Louis Counties, Minnesota; Lan County, Oregon

City Inspectors: Little Rock, Arkansas; Miami Beach, Florida; Atlanta, Georgia

Santa Barbara County Legal Officers

Library Personnel: Inglewood, California; Virginia Beach, Virginia

Parks and Recreation Officers: Costa Mesa, Kern County, Freemont and Lakewood California; Miami Beach, Florida; Atlanta, Georgia; Overland Park, Kansas; Mesquite, Texas

Personnel Officers: Orange County, California; Atlanta, Georgia; Jefferson Parish, Louisiana

Planning Officers: Little Rock, Arkansas; Peoria, Illinois; Costa Mesa, Concord and Inglewood, California

Police/Sheriff's Office: Chula Vista, Compton, Concord, Costa Mesa, Fresno County, Garden City, Glendale, Kern County, Pasadena, Sacramento County, Salinas, San Bernadino, San Jose, San Mateo County, and Santa Barbara County, California; Boulder, Colorado; West Hartford, Connecticut; Fort Lauderdale, Miami, Miami Beach, and North Miami, Florida; Fulton County, Georgia; Peoria, Illinois; Baton Rouge, Louisiana; Somerville, Maine; Ann Arbor and Southfield, Michigan; Dakota County, Minnesota; Memphis, Tennessee; Amarillo, Tyler, Forth Worth, and Mesquite, Texas; Arlington County, Virginia; King County, Washington

Job Enlargement

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- n=177 Rao, G. V. S. & Ganguly, T. A study of perceived need satisfaction and importance of highly skilled and skilled personnel. Indian Journal of Industrial Relations, 1971, 6, 277-287.
- n=500 Rao, G. V. S. & Rao, V. G., A study of factors contributing to satisfaction and importance of industrial personnel: A test of the two-factor theory. Indian Journal of Industrial Relations, 1973, 9, 233-262.
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structure
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- Police: Odgen, Utah; Bloomington, Minnesota; Elmhurst, Illinois; Santa Ana, Pacifica, Whittier, Eureka, and Simi Valley, California
- Office Workers in Mayors/City Manager's Office: Eugene, Oregon; Dayton, Ohio; Palo Alto, California; Pueblo and Lakewood, Colorado
- Clerical and Engineering Personnel of Fayetteville, North Carolina
- City Workers of Santa Ana, California
- County Workers of Forsyth, North Carolina
- Clerical Workers of Arapahoe County, Colorado
- Sanitation Inspectors and Drivers of Rocky Mountain, North Carolina
- Park Maintenance Supervisors: Little Rock, Arkansas; Scottsdale, Arizona
- Secretarial Workers of Montgomery County, Maryland
- Public Safety Officers: Durham and Winston-Salem, North Carolina
- Library Management Personnel of Vigo County, Indiana
- Ohio State Highway Construction Crews
- Oregon State Mental Health Hospital Workers

Personal Variables

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Pleasures at Work

Cascade, Oregon

Odds and Ends

City Workers of Mesa City, Arizona

City Workers of Pontiac, Michigan

Productivity Bargaining

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Police Department of Orange, California

Public Works and Uniformed Employees of Council Bluffs, Iowa

Firefighters: Tacoma, Washington; Portland, Maine; New York, New York

Civil Servants of Nassau County, New York

Medicaid Clerks of New York, New York

City Workers of Philadelphia, Pennsylvania

Park Police of Portland, Maine

Sanitation Workers: Flint and Detroit, Michigan; Portland, Maine; Washington, D. C.

County Workers of San Mateo, California

Recognition

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- n=114 Schwartz, T. M., Moscato, D. R., & Shapiro, H. J. Characteristics of organizational climate and managerial job satisfaction: An empirical study. Psychological Reports, 1975, 37, 299-305.

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Work Standards

City Water Workers of Philadelphia, Pennsylvania

City Auto Mechanics of Fort Worth, Texas

Pennsylvania State Data Processors

City Workers of Phoenix, Arizona

City Workers of Riverside, California

Solano County, California: Janitors, Probation Officers, Social Workers

New York, New York: Health and Welfare Personnel, Vehicle Repair Shop Workers

Vehicle Maintenance Workers of Harrisburg, Pennsylvania

Workers of Santa Clara County, California

Street Maintenance Workers of Kansas City, Missouri

Road Maintenance Workers of King County, Washington

Sanitation Workers of Xenia, Ohio

Water Meter Readers of Atlanta, Georgia

Hospital Laundry Workers of San Francisco, California

Utah Highway Workers

Department of Public Works, State of California

Arizona State Highway Maintenance Workers

Appendix II

Reinforcer Percentages Per Job Factor

Appendix 2

Reinforcer Percentages Per Job Factor

I. Supervision	<u>Percentage</u>
1. career development	75*
educational incentives	23
2. educational incentives	62*
recognition	33
3. job enrichment	53
educational incentives	44
4. educational incentives	31*
career development	66
5. career development	63*
flextime	33
6. educational incentives	29*
flextime	66
7. job enrichment	70*
recognition	24
8. recognition	28*
flextime	69
9. flextime	38*
job enrichment	58
10. recognition	21*
career development	74

* χ^2 ; $p < .05$, $df = 1$

Note: Percentages do not sum to 100% due to missing data.

Appendix 2

Reinforcer Percentages Per Job Factor

II. Information Gathering and Dissemination	<u>Percentages</u>
1. educational incentives	51
career development	47
2. career development	73*
recognition	24
3. recognition	49
flextime	46
4. career development	67*
job enrichment	31
5. flextime	46
job enrichment	49
6. career development	59
flextime	40
7. educational incentives	32*
flextime	63
8. job enrichment	49
recognition	46
9. recognition	47
educational incentives	49
10. educational incentives	26*
job enrichment	69

* χ^2 ; $p < .05$, $df = 1$

Note: Percentages do not sum to 100 % due to missing data.

Appendix 2

Reinforcer Percentages Per Job Factor

III. Technical Problem Solving	<u>Percentage</u>
1. career development	77*
educational incentives	21
2. educational incentives	45
recognition	52
3. educational incentives	54
flextime	41
4. flextime	20*
career development	78
5. flextime	57
recognition	42
6. career development	68*
recognition	27
7. job enrichment	64*
flextime	32
8. job enrichment	59*
recognition	36
9. job enrichment	70
recognition	27
10. career development	59*
job enrichment	38

* χ^2 ; $p < .05$, $df = 1$

Note: Percentages do not sum 100% due to missing data.

Appendix 2

Reinforcer Percentages Per Job Factor

IV. Executive Decision Making	<u>Percentage</u>
1. career development	74*
recognition	22
2. flextime	49
educational incentives	47
3. career development	54
job enrichment	42
4. career development	70*
flextime	27
5. recognition	48
flextime	49
6. flextime	36*
job enrichment	61
7. educational incentives	26*
job enrichment	60
8. job enrichment	38*
career development	58
9. recognition	54
job enrichment	45
10. educational incentives	60*
recognition	39

* χ^2 ; $p < .05$, $df = 1$

Note: Percentages do not sum to 100% due to missing data.

Appendix III

Questionnaire

PLEASE NOTE

This is a questionnaire on job motivators. Your motivation to do your job well might include a sense of personal satisfaction or a paycheck. Yet not every aspect of a job is satisfying, and money is often days delayed from a particularly difficult task. Can new motivators be offered to good workers which will raise the desire to work, and therefore create superior workers and higher levels of productivity? You are being asked to assist in judging the effectiveness of a variety of job motivators in a variety of work situations.

There are no right or wrong answers. What would be the appropriate choice after a hot afternoon of lawn mowing - lemonade or orange juice? As in this questionnaire, the "correct" response should be based simply on a personal preference.

The tasks described here are aspects of many peoples' jobs who are at the 13 to 15 level. You may, however, find one or more which do not conform to your work situation. Please try to imagine yourself in the situations in which you have no real experience.

DIRECTIONS

1. Please fill out the page of personal information.
2. Please read the page of DEFINITIONS carefully. These are the descriptions of the job motivators under consideration.
3. Carefully read the description of each work situation. Assume that you are required to perform that task. Also assume that you could receive only one of the two rewards which are listed after the situations. Place an "x" or check mark next to the reward you would prefer.

For example: The work situation states that you must make policy decisions. Then you are given the choice of flextime or educational incentives as a reward for performing this task. Choose the reward you would prefer for doing your job well. If your preference is flextime, then put an "x" on the line next to flextime.

 X a. flextime
 b. educational incentives

4. Feel free to refer back to the page of DEFINITIONS or to ask questions as you fill out the form.
5. The last page of the questionnaire is blank and is available for any comments you might like to make, either on the structure or the content of the questionnaire.

PLEASE DO NOT PUT YOUR NAME OR ANY OTHER IDENTIFYING MARK ON THIS QUESTIONNAIRE

1. My age is between:
 - a. 20-25
 - b. 26-30
 - c. 31-35
 - d. 36-40
 - e. 41-45
 - f. 46-50
 - g. 51-55
 - h. 56-60
 - i. 61-65
 - j. 66-70
2. My sex is:
 - a. male
 - b. female
3. My racial identification is:
 - a. Black
 - b. White
 - c. Spanish-surname
 - d. American Indian
 - e. Asian
 - f. Other
4. My highest level of formal education is:
 - a. grade school
 - b. high school diploma or equivalent
 - c. some college
 - d. an associate of arts degree
 - e. a bachelors degree
 - f. some post graduate education
 - g. a masters degree
 - h. a doctoral degree
5. Did your employer provide specific training for your current job?
 - a. yes
 - b. no
6. I have held my present job for _____ years.
7. I have been in Civil Service for _____ years.
8. I have been in my present occupation for _____ years.
9. My position title is _____.
10. My job series is _____.

11. How many people do you supervise?
- a. 0
 - b. 1-5
 - c. 6-10
 - d. more than 10
12. Do you expect to move higher than your present job?
- a. yes
 - b. no
13. I expect to work another _____ years before retiring.
14. In general, how satisfied are you with your present job?
- a. Extremely dissatisfied
 - b. Very dissatisfied
 - c. Moderately dissatisfied
 - d. Slightly dissatisfied
 - e. Neither satisfied nor dissatisfied
 - f. Slightly satisfied
 - g. Moderately satisfied
 - h. Very satisfied
 - i. Extremely satisfied

Read the statements below and assume that you are required to perform the tasks indicated. Also assume that your supervisor is authorized to grant you a reward for performing that task well. Select from the two "rewards" available the one you would prefer and put an "x" or check mark next to that reward.

1. A bulletin has just reached you stating that a dangerous storm will approach your location within 48 hours. Lots of equipment and resources could be destroyed. You need to make preparations for securing all resources and maintaining calm within the department.

☐ a. personal acclaim
☐ b. job enrichment
2. You've been asked by your superiors where you expect your department to be in five years' time. This necessitates a defining of the level of production you desire, as well as long range goals and priorities, and methods of reaching these goals.

☐ a. educational incentives
☐ b. personal acclaim
3. Several proposals cross your desk for review, and for comments on the utility and accuracy of the approaches in your programs. You are to make a judgment on them and then provide a written report for your boss.

☐ a. flextime
☐ b. personal acclaim
4. A new, technical project has been given to your department. You, as supervisor are responsible for implementing and directing the project smoothly and efficiently through to completion.

☐ a. job enrichment
☐ b. educational incentives
5. This week you are scheduled to fly to Kansas for a seminar to share with other manager-supervisors the workings of your unit. You must prepare a fifteen minute speech.

☐ a. career development
☐ b. job enrichment
6. As you have the know-how to provide quality work, your boss has just given you a new project. You are expected to provide technical quality control throughout the project.

☐ a. career development
☐ b. educational incentives
7. Part of your job is to keep abreast of what new developments and kinds of research are being done which might be useful in your line of work.

☐ a. educational incentives
☐ b. career development
8. Monthly, there is a meeting of all the unit heads in order to maintain the flow of information. Each time, you must prepare a summary of the major accomplishments and setbacks of your workers in the past month.

☐ a. career development
☐ b. flextime

Read the statements below and assume that you are required to perform the tasks indicated. Also assume that your supervisor is authorized to grant you a reward for performing that task well. Select from the two "rewards" available the one you would prefer and put an "x" or check mark next to that reward.

9. Realizing that your staff is not as well-trained or as current as it should be, you need to decide on development and training programs for your employees.

☐ a. job enrichment
☐ b. educational incentives

10. When your unit undergoes changes to improve its efficiency, you as supervisor of the unit must evaluate the outcome. You must document whether actual improvements have taken place and to what extent.

☐ a. flextime
☐ b. job enrichment

11. A personality conflict has arisen within your department. You value both people and would like to help them in getting the problem worked out. It may take a great deal of your time to resolve the conflict.

☐ a. educational incentives
☐ b. job enrichment

12. Most of the suggestions given to you by your staff request more time off, work preferences, etc. You will attempt to satisfy these requests, while keeping in mind your departmental work requirements.

☐ a. educational incentives
☐ b. flextime

13. A complex technical problem has arisen for which you have no immediate solution. It necessitates your knowing which experts to consult on the matter.

☐ a. career development
☐ b. personal acclaim

14. There are many diversified responsibilities within your department. You must find the most efficient method of determining who is doing what within your unit, and whether this is in keeping with your guidelines.

☐ a. educational incentives
☐ b. job enrichment

15. Individually, you must decide on policies and procedures for your unit. Together with the other managers, you must form policy decisions for the department.

☐ a. flextime
☐ b. educational incentives

16. Since public relations plays an important role in your department, you are occasionally asked to attend social functions as the official representative of your department.

☐ a. personal acclaim
☐ b. flextime

Read the statements below and assume that you are required to perform the tasks indicated. Also assume that your supervisor is authorized to grant you a reward for performing that task well. Select from the two "rewards" available the one you would prefer and put an "x" or check mark next to that reward.

17. Occasionally, you are called upon to solve diversified and complex technical problems when your staff is uncertain how to proceed.
☐ a. educational incentives
☐ b. personal acclaim
18. One of your potentially best employees has demonstrated some behavior interrupting the work flow of the other staff members. You must guide this individual to better behaviors.
☐ a. job enrichment
☐ b. personal acclaim
19. A new technical project has been given to your department. You, as supervisor are responsible for implementing and directing the project smoothly and efficiently through to completion.
☐ a. career development
☐ b. job enrichment
20. An idea has been put forth: to merge your unit with another one. You have been asked to serve as a part of a team to negotiate the possibility, and to advise your superiors of the findings.
☐ a. job enrichment
☐ b. career development
21. Occasionally, you are called upon to solve diversified and complex technical problems when your staff is uncertain how to proceed.
☐ a. educational incentives
☐ b. flextime
22. Having gathered information on several local clubs and organizations, you must decide what would be the most beneficial way to spend your time in terms of work-related contacts and enrichment.
☐ a. personal acclaim
☐ b. educational incentives
23. On Monday morning, you find that the amount of new work you need to accomplish far exceeds the time you have to do it in. Thus, you need to establish a priority ranking of which functions are most important, and should be dealt with first.
☐ a. career development
☐ b. personal acclaim
24. Your boss has informed you that he thinks it's important for you to allocate time each week to be available for individuals who want to have a discussion with the "person in charge".
☐ a. flextime
☐ b. job enrichment

Read the statements below and assume that you are required to perform the tasks indicated. Also assume that your supervisor is authorized to grant you a reward for performing that task well. Select from the two "rewards" available the one you would prefer and put an "x" or check mark next to that reward.

25. Before you on your desk are performance appraisal forms. You must review and evaluate your subordinates' job performances.
_____ a. educational incentives
_____ b. personal acclaim
26. A new project is assigned to your staff; supervision must come from you, but you wonder where you will find the time.
_____ a. personal acclaim
_____ b. flextime
27. Several policy changes are being implemented within your agency. You must inform your staff. This will mean at least 3 or 4 meetings and a series of memos outlining the changes.
_____ a. career development
_____ b. job enrichment
28. A Washington agency has displayed an interest in the work your division performs. You must decide on how to maintain contact with the appropriate government people to keep them informed.
_____ a. personal acclaim
_____ b. flextime
29. Because of continued very poor performance, you are about to fire a member of your staff. Then the procedure will start whereby you'll attempt to interview a large number of applicants, and hire someone new.
_____ a. career development
_____ b. flextime
30. A complex technical problem has arisen for which you have no immediate solution. It necessitates your knowing which experts to consult on the matter.
_____ a. job enrichment
_____ b. flextime
31. A small, relatively new company has bid to supply large quantities of your materials. You need to do some background work on whether the company will be able to meet the quota, is reliable, etc.
_____ a. career development
_____ b. personal acclaim
32. Several times a year, you attend seminars and conventions which provide you with new ideas and helpful information. Since you cannot afford to send all the members of your staff, you need to find some means of getting the information to the people to whom it would be the most beneficial.
_____ a. educational incentives
_____ b. career development

Read the statements below and assume that you are required to perform the tasks indicated. Also assume that your supervisor is authorized to grant you a reward for performing that task well. Select from the two "rewards" available the one you would prefer and put an "x" or check mark next to that reward.

33. One of your major functions as manager is to implement the decisions which are made "above your head" without causing unnecessary disruptions in the work-flow.
- _____ a. career development
_____ b. flextime
34. A new technical project has been given to your department. You as supervisor are responsible for implementing and directing the project smoothly and efficiently through to completion.
- _____ a. job enrichment
_____ b. personal acclaim
35. Your agency is an equal employment opportunity employer, and one of your responsibilities is to meet regularly with equal employment representatives to improve relations.
- _____ a. flextime
_____ b. job enrichment
36. You are concerned that your department isn't as productive as it should be. You decide to plan some new projects for your unit, but which individuals should you assign to each project for maximum efficiency?
- _____ a. personal acclaim
_____ b. career development
37. You see an opportunity to make your department grow into a more productive, efficient unit, but planning, selling and implementing your idea will mean extra work and less free time for you.
- _____ a. educational incentives
_____ b. flextime
38. Several times a month other departments request information from and about your unit. You see this as a good way of developing useful contacts, but it does take a good deal of your time.
- _____ a. job enrichment
_____ b. personal acclaim
39. Before you on your desk are performance appraisal forms. You must review and evaluate your subordinates' job performances.
- _____ a. career development
_____ b. educational incentives
40. Several proposals cross your desk for review, and for comments on the utility and accuracy of the approaches in your programs. You are to make a judgment, then provide a written report for your boss.
- _____ a. flextime
_____ b. career development

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